

March 12, 2002

Via DHL

U.S. Patent and Trademark Office Crystal Mall I Seventh Floor, Receptionist Attn: Examiner William Moore, Art Unit 1652 1911 South Clark Street Arlington, VA 22202

> Re: U.S. Application No. 09/652,743 filed August 31, 2000

"Proteases and Variants Thereof"

Dear Examiner Moore:

As per your request, enclosed is a computer readable form of the Sequence Listing mailed on October 22, 2001. The content of the paper copy that was filed on October 22, 2001 and of the enclosed computer readable form is the same. This submission contains no new matter.

If you have any questions, please do not hesitate to contact me.

Very truly yours,

Elias J. Lámbiris

Director, Patents - US

•	- () 1600 Kup
	CRF corrected by the STIC Systems Branch CRF Processing Date: 3/13/20
N	Changed a file from non-ASCII to ASCII ENTERE Belied by: (STIC)
	Changed the margins in cases where the sequence text was "wrapped" down to the next line.
	Edited a format error in the Current Application Data section, specifically:
	Edited the Current Application Data section with the actual current number. The number inputted by the applicant was the prior application data; or other
	Added the mandatory heading and subheadings for "Current Application Data".
	Edited the "Number of Sequences" field. The applicant spelled out a number instead of using an integer.
	Changed the spelling of a mandatory field (the headings or subheadings), specifically:
	Corrected the SEQ ID NO when obviously incorrect. The sequence numbers that were edited were:
•	Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited:
;	Corrected subheading placement. All responses must be on the same line as each subheading. If the applicant placed a response below the subheading, this was moved to its appropriate place.
	Inserted colons after headings/subheadings. Headings edited included:
	Deleted extra, invalid, headings used by an applicant, specifically:
•	Deleted: non-ASCII "garbage" at the beginning/end of files; secretary initials/filename at end of files page numbers throughout text; other invalid text, such as
	Inserted mandatory headings, specifically:
	Corrected an obvious error in the response, specifically:
•	
	Edited identifiers where upper case is used but lower case is required, or vice versa.
	Edited identifiers where upper case is used but lower case is required, or vice versa. Corrected an error in the Number of Sequences field, specifically:
_	
C	Corrected an error in the Number of Sequences field, specifically:
C	Corrected an error in the Number of Sequences field, specifically: A "Hard Page Break" code was inserted by the applicant. All occurrences had to be deleted. Deleted ending stop codon in amino acid sequences and adjusted the "(A)Length:" field accordingly (error

^{*}Examiner: The above corrections must be communicated to the applicant in the first Office Action. DO NOT send a copy of this form.

3/1/95







Input Set : A:\PTO.AMC.txt



```
3 <110> APPLICANT: Norregaard-Madsen, Mads
             Ostergaard, Peter Rahbek
              Christensen, Claus Bo Voge
              Lassen, Soren Flensted
      8 <120> TITLE OF INVENTION: Novel Proteases And Variants Thereof
     10 <130> FILE REFERENCE: 5665.400-US
C--> 12 <140> CURRENT APPLICATION NUMBER: US/09/652,743A
C--> 12 <141> CURRENT FILING DATE: 2000-08-31
     12 <160> NUMBER OF SEQ ID NOS: 45
     14 <170> SOFTWARE: PatentIn version 3.1
     16 <210> SEQ ID NO: 1
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     18 <212> TYPE: DNA
     19 <213> ORGANISM: Bacillus
     21 <220> FEATURE:
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     24 <223> OTHER INFORMATION:
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     28 <221> NAME/KEY: mat_peptide
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     30 <223> OTHER INFORMATION:
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     36 <223> OTHER INFORMATION:
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W--> 40 <221> NAME/KEY: pro-peptide
     41 <222> LOCATION: (94)..(282)
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     45 <400> SEQUENCE: 1
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     47 Leu Val Ser Lys Lys Ser Val Lys Arg Gly Leu Ile Thr Gly Leu Ile
                        -90
                                             -85
                                                                                96
     50 ggt att tot att tat tot tta ggt atg cac cog gcc caa gcc gcg cca
     51 Gly Ile Ser Ile Tyr Ser Leu Gly Met His Pro Ala Gln Ala Ala Pro
                    -75
                                         -70
     54 tog cot cat act cot gtt toa ago gat cot toa tac aaa gog gaa aca
                                                                               144
     55 Ser Pro His Thr Pro Val Ser Ser Asp Pro Ser Tyr Lys Ala Glu Thr
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                                     -55
                                                                               192
     58 tog gtt act tat gac coa cac att aag ago gat caa tac ggo ttg tat
     59 Ser Val Thr Tyr Asp Pro His Ile Lys Ser Asp Gln Tyr Gly Leu Tyr
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                                                     -35
```





Input Set : A:\PTO.AMC.txt

				ttt Phe													240
64						-25					-20					-15	000
				aag													288
	Ala	GIu	Lys	Lys		Pro	АТа	rys	Ата	-5	Tyr	ser	тте	ьуs -1	ser 1	vaı	
68	a++	aat	tat	gat	-10	caa	aca	ann	atc	-	aac	aca	acc	_	_	cca	336
				Asp													330
72	110	OLI	5	пор		**** 9		10	,				15		-1-		
	tac	aga	aca	atc	qtt	cat	att	tca	aqc	agc	atc	ggt	tca	tgc	acc	gga	384
				Ile													
76	•	20					25					30					
				ggt													432
79 '	Trp	Met	Ile	Gly	Pro	Lys	Thr	Val	Ala	Thr	Ala	Gly	His	Cys	Ile		
80						40					45					50	
				agc													480
83	Asp	Thr	Ser	Ser	Gly	Ser	Phe	Ala	Gly		Ala	Thr	Val	Ser		Gly	
84					55					60					65		
				aca													528
	Arg	Asn	Gly	Thr	Ser	Tyr	Pro	Tyr		Ser	Val	Lys	Ser		Arg	Tyr	
88				70					75					80			576
				tca													576
	Phe	Ile		Ser	Gly	Trp	Arg		GIŸ	Asn	Thr	Asn		Asp	Tyr	GIY	
92			85					90		+	+	~+ ^	95	+	++0	~~~	624
94	gca	atc	gaa	cta Leu	agc	gaa	ccg	atc	ggc	aal	mbr.	y LC	gya	Tur	Dho	Glw	024
	АТа		GIU	Leu	ser	Glu	105	TTE	сту	ASII	TIII	110	Gry	тут	FIIC	GIY	
96	+ 2.0	100	t 2.0	act	act	toa		ctt	att	aaa	aca		att	acc	atc	agc	672
				Thr													0,2
	115		1 7 1	1111	1111	120		пса	, 41	011	12					130	
			י ככי	a aac	gat			a gea	a aa	e aca			т са	or cat	t tca	gga	720
																Gly	
104	-	-1-	'	0-1	135					14			•		145		
		r ati	t aco	ato	tec	gaa	acc	r tat	t aaa	a tte	g ca	g ta	c gc	a ato	g gad	acg	768
																Thr	
108				150				_	15					160			
110	tac	gga	a gga	a caa	ago	ggt	tca	a cc	g gta	a tt	c gaa	a ca	a ag	c ago	c tcc	aga	816
111	Туз	r Gl	y Gly	y Glr	ser	Gly	y Sei	r Pro	o Vai	l Ph	e Gl	u G1:	n Se	r Se	r Sei	Arg	
112			165	5				170	0				17	5			
114	acq	g aa	e tgi	t ago	ggt	cog	g tgo	c to	g ct	t gc	c gt	a ca	c ac	a aa	t gga	ı gta	864
115	Thi	c Asi	n Cys	s Sei	: Gly	y Pro	с Суя	s Se	r Lei	u Al	a Va	l Hi	s Th	r As	n Gly	y Val	
116		18					18					19					
118	tad	c gg	c gg	c tcc	tog	g tad	c aac	c aga	a gg	c ac	c cg	g at	t ac	a aa	a gag	ggtg	912
119	Туз	r Gl	y Gl	y Sei	seı			n Ar	g Gl	y Th			e Th	r Ly	s Glu	ı Val	
	195					200					20					210	
				t ttg													948
		a As	p Ası	n Lei			n Tr	p Ly:	s As			a GI:	n				
124					215	5				22	U						
127	<2.	10>	SEQ :	ID NO): 2												





Input Set : A:\PTO.AMC.txt

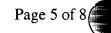
		L> LE 2> TY			16											
		3> OF			Baci	illus	3									
)> SI														
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138 139	Gly	Ile	Ser	Ile -75	Tyr	Ser	Leu	Gly	Met -70	His	Pro	Ala	Gln	Ala -65	Ala	Pro
142 143	Ser	Pro	His	Thr	Pro	Val	Ser	Ser -55	Asp	Pro	Ser	Tyr	Lys -50	Ala	Glu	Thr
146 147	Ser	Val -45	Thr	Tyr	Asp	Pro	His -40	Ile	Lys	Ser	Asp	Gln -35	Tyr	Gly	Leu	Tyr
150	Ser -30	Lys	Ala	Phe	Thr	Gly -25	Thr	Gly	Lys	Val	Asn -20	Glu	Thr	Lys	Glu	Lys -15
		Glu	Lys	Lys	Ser -10		Ala	Lys	Ala	Pro -5		Ser	Ile	Lys -1	Ser 1	
	Ile	Gly	Ser 5	Asp		Arg	Thr	Arg 10	Val	-	Asn	Thr	Thr 15			Pro
	Tyr	Arg 20	-	Ile	Val	His	Ile 25		Ser	Ser	Ile	Gly 30		Cys	Thr	Gly
166	_	Met	Ile	Gly	Pro	Lys 40		Val	Ala	Thr	Ala 45		His	Cys	Ile	Tyr 50
167 170 171		Thr	Ser	Ser	Gly 55		Phe	Ala	Gly	Thr 60		Thr	Val	Ser	Pro 65	
	Arg	Asn	Gly	Thr 70		Tyr	Pro	Tyr	Gly 75		Val	Lys	Ser	Thr 80	Arg	Tyr
178 179	Phe	Ile	Pro 85	Ser	Gly	Trp	Arg	Ser 90	Gly	Asn	Thr	Asn	Tyr 95	Asp	Tyr	Gly
182 183	Ala	Ile 100	Glu	Leu	Ser	Glu	Pro 105	Ile	Gly	Asn	Thr	Val 110	Gly	Tyr	Phe	Gly
	Tyr 115	Ser	Tyr	Thr	Thr	Ser 120	Ser	Leu	Val	Gly	Thr 125	Thr	Val	Thr	Ile	Ser 130
		Tyr	Pro	Gly	Asp 135	Lys	Thr	Ala	Gly	Thr 140	Gln	Trp	Gln	His	Ser 145	Gly
	Pro	Ile	Ala	Ile 150	Ser	Glu	Thr	Tyr	Lys 155	Leu	Gln	Tyr	Ala	Met 160	Asp	Thr
	Tyr	Gly	Gly 165	Gln	Ser	Gly	Ser	Pro 170	Val	Phe	Glu	Gln	Ser 175	Ser	Ser	Arg
	Thr	Asn 180	Cys	Ser	Gly	Pro	Cys 185	Ser	Leu	Ala		His 190		Asn	Gly	Val
206	Tyr 195		Gly	Ser	Ser	Tyr 200		Arg	Gly	Thr				Lys	Glu	Val 210
		Asp	Asn	Leu	Thr 215		Trp	Lys	Asn	Ser 220		Gln				
	<210	0> SI	EQ II	ON C												
		1> L1														
		2> T														
		3> 01			Bac	illus	S									
219	<220	0> F	EATU	RE:												





Input Set : A:\PTO.AMC.txt

	220	- 222	- NT	N M TO 7 I	zev.	CDC												
				AME/F			110	1261										
				OCATI THER														
						MIM	LON	•										
				EATUI		m n +	2021	- 4 4 -										
				AME/F														
				OCAT!		•	•											
				THER) RMA'I	TON	:										
				EATUI														
				AME/F														
				OCAT:			•	•										
				THER		RMA	NOI	:										
			_	EATUI														
M>	238	<22 1	L> N2	AME/I	KEY:	pro-	pept	tide										
	239	<222	?> L(CAT	ON:	(79)	(3	360)										
	240	<223	3> 0:	THER	INFO	RMAT	CION	:										
	243	<400)> SI	EQUE	ICE:	3												
	244	atg	aaa	a cta	a cta	ı tta	aaa	a ct	tt ac	et ti	tt gt	ta to	ge a	ata t	itt a	atg 1	tta	45
	245	Met	Lys	s Lei	ı Let	ı Lei	Lys	s Le	eu Th	nr Ph	ne Va	al Cy	/s]	[le I	he N	let 1	Leu	
		-120	-				-11					_	110					
	248	agt	qq	att	cta	tco	cca	a qt	ta aa	ac q	ca ac	et ca	aa qo	et ga	ag ac	ct ct	tt act	93
																	eu Thr	
		-105					-10						95				-90	
				aat	aaa	ata	agt	саσ	aaσ	caq	gaa			t.a.t.	aaa	cta	gat.	141
				Asn														
	254	цуз	пси	ASH	цуз	-85	DCI	0111	цу	OIII	-80	110	DCI	- 1 -	275	-75		
		maa	ma a	atg	aat		att	cta	att	αat		maa	aca	саа	tct		tca	189
		-	_	Met	-		_			_	_	-						107
	258	GIU	GIU	мес	-70	тут	Val	neu	116	-65	пец	GIU	1111	GIII	-60	GIU	Det	
			_ + +	+		~~~	~~+	+			++~	~~~	~~+			+++	a a t	237
				tcg														231
		rre	тте	Ser	тте	СТА	ASP	ASII		ASP	Leu	СТУ	ASP	-45	ser	Pne	1111	
	262			- 55					-50									205
				ggg														285
		Ser		Gly	Lys	val	СТА		GIŸ	GIU	Leu	GIU	_	тте	Asn	Leu	GIU	
	266		-40					-35					- 30					222
				cgt														333
			Phe	Arg	Asn	Pro		Leu	Thr	Val	Val	-	Pro	Leu	Thr	Arg	_	
		-25					-20					-15					-10	
				gaa														381
		Pro	Ile	Glu	Gln	-	Ile	Ser	Pro			Val	Ile	Gly	-	Asp	Gly	
	274					- 5				-1	_				5			
				caa														429
	277	Arg	Arg	Gln	Val	Gln	Asn	Thr	Ser	Phe	Met	Pro	Phe	Arg	Ala	Leu	Thr	
	278			10					15					20				
	280	tat	att	gag	ttt	gga	aac	ctt	aca	agt	aca	tgg	agt	tgt	tct	gga	ggt	477
	281	Tyr	Ile	Glu	Phe	Gly	Asn	Leu	Thr	Ser	Thr	Trp	Ser	Cys	Ser	Gly	Gly	
	282	-	25			-		30				-	35	-		_	_	
		gtq	att	gga	aca	gat	tta	gtt	gtt	act	aat	gca	cat	tgt	gta	gaa	ggt	525
				Gly														
	286			-1		- 1	45					50		4			55	







Input Set : A:\PTO.AMC.txt

				_			-	gtt			_			-			573
	Ser	Val	Leu	Ala	_	Thr	Val	Val	Pro	_	Met	Asn	Asn	Ser		Trp	
290	~~~	+ - +	~~~	ant.	60	200	a++	act	020	65 a++	2+0	t 2.0	aat	a a t	70	tac	621
								act Thr									021
294	Ата	1 7 1	GLY	75	1 7 1	лгу	vai	1111	80	116	116	1 7 1	110	85	GIN	1 7 1	
	aσa	aat	aac		act	tca	σασ	ttt		tat	act	ata	ctt		σta	qca	669
	_				-			Phe	-		-			-			
298			90	-				95	•	-			100				
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301	Pro	Asp	Ser	Asp	Gly	Arg	His	Ile	Gly	Asn	Arg	Ala	Gly	Ile	Leu	Ser	
302		105					110					115					
			_				-	aac									765
		Thr	Glu	Thr	Gly		Val	Asn	Glu	Asn		Phe	Leu	Arg	Thr	_	
	120					125					130					135	0.4.0
					-			tca							-		813
	GIA	Tyr	Pro	GLY	_	гĀЗ	тте	Ser	GIU		гàг	Leu	ire	ser	150	Trp	
310	~~~	2+4	a++	aat	140	+ a+	ant.	gca	+++	145	03 t	002	a 2 0	at a		t t c	861
		-	-		_		-	Ala		_		-	_				001
314	СТУ	nec	val	155	Alg	DET	лэр	пια	160	пец	1113	ALG	изр	165	пси	THE	
	tac	aat.	at.σ		acc	t.a.t.	t.t.t.	ggt		t.ca	aat.	tct	cct		tta	aac	909
								Gly									
318	_1_		170			4		175					180				
320	agc	gta	gat	tca	atg	gtt	gcg	gtt	cat	aat	gca	ggg	tat	atc	gtt	ggt	957
321	Ser	Val	Asp	Ser	Met	Val	Ala	Val	His	Asn	Ala	Gly	Tyr	Ile	Val	Gly	
322		185					190					195					
324	ggt	aat	agg	gaa	att	aat	ggt	ggt	cct	aaa	atc	aga	aga	gat	ttt	aca	1005
	_	Asn	Arg	Glu	Ile	Asn	Gly	Gly	Pro	Lys		Arg	Arg	Asp	Phe		
	200					205					210					215	
		tta															1026
	Asn	Leu	Phe	Asn		Met	Asn										
330	-21	۱۰ aı	70 TI	. NO	220												
		0> SI 1> LI															
		2> T			1 4												
		3> OI			Bac	illus	3										
		0> SI															
	Met		s Lei			ı Lys	s Le	eu Th	ır Pl	ne Va	al Cy	ys :	Ile I	Phe 1	Met 1	Leu	
341	-120					-13					- 3	110					
344	Ser	Gly	y Ile	e Lei	ı Se:	r Pro	o Va	al As	sn A	la Th	nr G	ln A	la Gi	lu T	hr Le	eu Thr	
	-10					-10						95				-90	
348	Lys	Leu	Asn	Lys		Ser	Gln	Lys	Gln	Glu	Pro	Ser	Tyr	Lys	Leu	Asp	
349					-85					-80					- 75		
	Glu	Glu	Met	_	Tyr	Val	Leu	Ile	_	Leu	Glu	Thr	Gln		Glu	Ser	
353			_	-70 -7	~ -	_	_	1	-65	_		_		-60	5 2	m1.	
	ше	тте		тте	GLY	Asp	Asn	Thr	Asp	Leu	GTA	Asp		ser	rne	Thr	
357	C ~ ~	T 0	-55	T	37- 7	C1	11: ~	-50	C1	T 011	C1	T ***	-45	λ ~ ~	T 011	Clu	
360	ser	ьeu	стλ	гĀг	val	GТĀ	HIS	Gly	GIU	ьeu	GIU	гÀг	тте	ASN	ьeu	GIU	

RAW SEQUENCE LISTING ERROR SUMMARY
PATENT APPLICATION: US/09/652,743A

DATE: 03/13/2002 TIME: 16:47:07

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF3\03132002\1652743A.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the $\langle 220 \rangle$ to $\langle 223 \rangle$ fields of each sequence which presents at least one n or Xaa.

Seq#:18; N Pos. 21,36

Seq#:20; N Pos. 12,15,18,21,24

Seq#:21; Xaa Pos. 2

Seq#:22; N Pos. 22,25,31

Seq#:23; Xaa Pos. 5

Seq#:24; N Pos. 15,18

Seq#:25; Xaa Pos. 6

Seq#:38; N Pos. 18,21,27

Seq#:39; Xaa Pos. 2,4

Seq#:40; N Pos. 12,15,21

Seq#:44; N Pos. 14,15





1600

RAW SEQUENCE LISTING DATE: 03/13/2002 PATENT APPLICATION: US/09/652,743A TIME: 16:16:04

Input Set : A:\sequence.ST25.txt

Output Set: N:\CRF3\03132002\I652743A.raw

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3 <110> APPLICANT: Norregaard-Madsen, Mads
              Ostergaard, Peter Rahbek
              Christensen, Claus Bo Voge
              Lassen, Soren Flensted
      8 <120> TITLE OF INVENTION: Novel Ptoteases And Variants Thereof
     10 <130> FILE REFERENCE: 5665.400-US
C--> 12 <140> CURRENT APPLICATION NUMBER: US/09/652,743A
C--> 12 <141> CURRENT FILING DATE: 2000-08-31
     12 <160> NUMBER OF SEQ ID NOS: 45
     14 <170> SOFTWARE: PatentIn version 3.1
                                                                   Doss Not Comply
     16 <210> SEQ ID NO: 1
     17 <211> LENGTH: 948
                                                              Coffected Diskette Needed
     18 <212> TYPE: DNA
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     36 <223> OTHER INFORMATION:
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W--> 40 <221> NAME/KEY: pro-peptide
     41 <222> LOCATION: (94)..(282)
     42 <223> OTHER INFORMATION:
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                                                                                48
     47 Leu Val Ser Lys Lys Ser Val Lys Arg Gly Leu Ile Thr Gly Leu Ile
     48
                        -90
                                             -85
                                                                  -80
     50 ggt att tot att tat tot tta ggt atg cac ccg gcc caa gcc gcg cca
                                                                                96
     51 Gly Ile Ser Ile Tyr Ser Leu Gly Met His Pro Ala Gln Ala Ala Pro
                    -75
                                        -70
     54 tcg cct cat act cct gtt tca agc gat cct tca tac aaa gcg gaa aca
                                                                               144
     55 Ser Pro His Thr Pro Val Ser Ser Asp Pro Ser Tyr Lys Ala Glu Thr
                                    - 55
                                                         -50
                -60
     58 tcg gtt act tat gac cca cac att aag agc gat caa tac ggc ttg tat
                                                                               192
     59 Ser Val Thr Tyr Asp Pro His Ile Lys Ser Asp Gln Tyr Gly Leu Tyr
```

-45

60



Input Set : A:\sequence.ST25.txt

63					aca Thr							-		-	-		240
		_		_	tca Ser -10		_		-			_			_		288
					gat Asp												336
		-			gtt Val				_	_				_			384
79 80	Trp	Met	Ile	Gly	ccg Pro	Lys 40	Thr	Val	Ala	Thr	Ala 45	Gly	His	Cys	Ile	Tyr 50	432
					ggt Gly 55												480
					agc Ser						-		_	-	_		528
					gga Gly		_	_						_		,	576
95 96	Ala	Ile 100	Glu	Leu	agc Ser	Glu	Pro 105	Ile	Gly	Asn	Thr	Val 110	Gly	Tyr	Phe	Gly	624
99		Ser			act Thr		Ser					Thr					672
	Gly					Lys					Gln		-			gga Gly	720
	Pro				e Ser					Leu	_		-	_	Asp	e acg Thr	768
111 112	Tyr	Gly	Gly 165	Glr	ser	Gly	Ser	Pro 170	Val	Phe	e Glu	Glr	ser 175	Ser	Ser	aga Arg	816
$\frac{115}{116}$	Thr	Asn 180	Cys	Ser		Pro	Cys 185	Ser	Leu	Ala	ı Val	His 190	Thr	Asn	Gly	Val	864
119		Gly					Asn					Ile				gtg Val 210	912
123 124	Phe	Asp) Asn	Leu	acc Thr 215	Asn					Ala						948
127	<21	0> S	EQ I	D NC): 2												

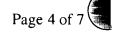




Input Set : A:\sequence.ST25.txt

Output Set: N:\CRF3\03132002\1652743A.raw

128 <211> LENGTH: 316 129 <212> TYPE: PRT 130 <213> ORGANISM: Bacillus 132 <400> SEQUENCE: 2 134 Leu Val Ser Lys Lys Ser Val Lys Arg Gly Leu Ile Thr Gly Leu Ile 135 -90 -85 -80 138 Gly Ile Ser Ile Tyr Ser Leu Gly Met His Pro Ala Gln Ala Ala Pro -70 142 Ser Pro His Thr Pro Val Ser Ser Asp Pro Ser Tyr Lys Ala Glu Thr 143 -60 -55 -50 146 Ser Val Thr Tyr Asp Pro His Ile Lys Ser Asp Gln Tyr Gly Leu Tyr 147 - 45 - 40 - 35 150 Ser Lys Ala Phe Thr Gly Thr Gly Lys Val Asn Glu Thr Lys Glu Lys -25 -20 154 Ala Glu Lys Lys Ser Pro Ala Lys Ala Pro Tyr Ser Ile Lys Ser Val 155 -10 -5 -1 1 158 Ile Gly Ser Asp Asp Arg Thr Arg Val Thr Asn Thr Thr Ala Tyr Pro 10 162 Tyr Arg Ala Ile Val His Ile Ser Ser Ile Gly Ser Cys Thr Gly 25 166 Trp Met Ile Gly Pro Lys Thr Val Ala Thr Ala Gly His Cys Ile Tyr 45 4 0 170 Asp Thr Ser Ser Gly Ser Phe Ala Gly Thr Ala Thr Val Ser Pro Gly 171 55 60 174 Arg Asn Gly Thr Ser Tyr Pro Tyr Gly Ser Val Lys Ser Thr Arg Tyr 175 70 75 178 Phe Ile Pro Ser Gly Trp Arg Ser Gly Asn Thr Asn Tyr Asp Tyr Gly 90 182 Ala Ile Glu Leu Ser Glu Pro Ile Gly Asn Thr Val Gly Tyr Phe Gly 183 100 105 186 Tyr Ser Tyr Thr Thr Ser Ser Leu Val Gly Thr Thr Val Thr Ile Ser 120 125 190 Gly Tyr Pro Gly Asp Lys Thr Ala Gly Thr Gln Trp Gln His Ser Gly 135 140 194 Pro Ile Ala Ile Ser Glu Thr Tyr Lys Leu Gln Tyr Ala Met Asp Thr 150 155 198 Tyr Gly Gln Ser Gly Ser Pro Val Phe Glu Gln Ser Ser Ser Arg 199 165 170 202 Thr Asn Cys Ser Gly Pro Cys Ser Leu Ala Val His Thr Asn Gly Val 185 190 203 180 206 Tyr Gly Gly Ser Ser Tyr Asn Arg Gly Thr Arg Ile Thr Lys Glu Val 207 195 200 205 210 Phe Asp Asn Leu Thr Asn Trp Lys Asn Ser Ala Gln 214 <210> SEQ ID NO: 3 215 <211> LENGTH: 1026 216 <212> TYPE: DNA 217 <213> ORGANISM: Bacillus 219 <220> FEATURE:







RAW SEQUENCE LISTING PATENT APPLICATION: US/09/652,743A DATE: 03/13/2002 TIME: 16:16:04

Input Set : A:\sequence.ST25.txt

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•	225	<220>	FE.	ATUF	RE:													
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W \		<221>				nro.	noni	-146										
W>		<222>		-		_												
		<223>					LION	•										
		<400>																
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			Lys	Let	ı Leı	ı Let			eu Ti	ar Pi	ne Va	al Cy		lle i	he N	Met .	Leu	
		-120					- 1.						L10					
					cta												tt act	93
			Gly	11ϵ	e Leu	ı Sei			al As	sn Al	la Th			La Gi	lu Th	ar Le	eu Thr	
		-105					-10					<u>-</u> 9	_				-90	
		aaa t																141
		Lys I	eu i	Asn	Lys		Ser	Gln	Lys	Gln	Glu	Pro	Ser	Tyr	Lys	Leu	Asp	
	254					-85					-80					-75		
	256	gaa g	aa a	atg	gat	tat	gtt	cta	att	gat	ttg	gaa	aca	caa	tct	gaa	tcg	189
	257	Glu G	lu 1	Met	Asp	Tyr	Val	Leu	Ile	Asp	Leu	Glu	Thr	Gln	Ser	Glu	Ser	
	258				-70					-65					-60			
	260	att a	tt	tcg	ata	gga	gat	aat	acc	gat	ttg	gga	gat	caa	tcg	ttt	act	237
	261	Ile I	le s	Ser	Ile	Gly	Asp	Asn	Thr	Asp	Leu	Gly	Asp	Gln	Ser	Phe	Thr	
	262			- 55					~50					- 45				
	264	tct t	ta	ggg	aag	gtg	gga	cat	gga	gaa	ctt	gag	aaa	att	aac	tta	gaa	285
		Ser L																
	266		40	_	_		_	-35	_				-30					
	268	gaa t	tt d	cgt	aat	cct	aat	tta	aca	gta	qta	gac	ccq	tta	aca	cqt	aaq	333
		Glu P								_	-	-	_			_	_	
	270			_			-20					-15					-10	
	272	cct a	tt	qaa	caa	aaa	atc	age	cct	ttt	att	att	ata	aac	gat.	σat.	aaa	381
		Pro I																
	274					_								_	-	-	1	
	276	aga a	σa d	caa	att	caa	aat.	act.	t.ct.	t.t.c	a t.a	cca	t.t.t.	cat	αca	ctt	act	429
		Arg A																123
	278			10	. ~ _	0 ± 1.1		1111	15	1 110		110	1 110	20	mu	LCu	1111	
		tat a			+++	ада	aac	ctt		aσt	aca	taa	ant		tet	aas	aat	477
		Tyr I																4//
	282	2		JIU	. 116	Эту	11011	30	TILL	261	1111	115	35	CYB	261	Эту	GTÄ	
		gtg a		anr	aca	rat	tta		att	act	aat	ac a		+ a+	ata	a s s	aat	525
		Val I																J Z J
	286		TG (этХ	T 11T	vəh	45	vaı	val	TIIT	ASII	50	urs	Cys	val	GIU	55	
	200	10					1 J					J (J J	

Input Set : A:\sequence.ST25.txt

Output Set: N:\CRF3\03132002\1652743A.raw

288	tct	gtg	tta	gca	ggt	act	gta	gtt	cct	ggt	atg	aac	aat	agt	cag	tgg	573
289	Ser	Val	Leu	Ala	Gly	Thr	Val	Val	Pro	Gly	Met	Asn	Asn	Ser	Gln	Trp	
290					60					65					70		
	_						-	act	-					-			621
	Ala	Tyr	Gly		Tyr	Arg	Val	Thr		Ile	Ile	Tyr	Pro	-	Gln	Tyr	
294				75					80					85			
	_				_			ttt	-		-			_	_	_	669
	Arg	Asn		Gly	Ala	Ser	GLu	Phe	Asp	Tyr	Ala	Ile		Arg	Val	Ala	
298			90					95					100				
		-		-		_		att			-	_					717
	Pro	_	ser	Asp	GIY	Arg		Ile	GIY	Asn	Arg		GTÀ	ше	Leu	Ser	
302		105	~~~		~ ~ ~	~~+	110					115					7.05
								aac						-			765
	120	1111	GIU	1111	СТА		val	Asn	GIU	ASII		Phe	Leu	Arg	THE	_	
		+ 2.0	000	aat	ant.	125	2 + 2	tca	~~~	202	130	++-	a + +	t at	++~	135	813
					_			Ser							_		013
310	GIY	тут	PIO	GIY	140	цуз	116	261	GIU	145	пλэ	ьеи	116	ser	150	TTD	
	aaa	atq	att	aat	-	tct	gat	gca	+++		cat	cga	gac	cta		ttc	861
								Ala		-		_	-		_		001
314	011	1100		155	**** 5	001			160	Lou	1110	9		165	Dou	1110	
	tac	aat	atg		acc	tat	ttt	ggt		t.ca	aat.	t.ct.	cct.		t.t.a	aac	909
			_	-				Gly						_			
318	•		170	_		_		175			- 1		180				
320	agc	gta	gat	tca	atg	gtt	gcg	gtt	cat	aat	gca	ggg	tat	atc	gtt	ggt	957
321	Ser	Val	Asp	Ser	Met	Val	Ala	Val	His	Asn	Ala	Gly	Tyr	Ile	Val	Gly	
322		185					190					195					
324	ggt	aat	agg	gaa	att	aat	ggt	ggt	cct	aaa	atc	aga	aga	gat	ttt	aca	1005
325	Gly	Asn	Arg	Glu	Ile	Asn	Gly	Gly	Pro	Lys	Ile	Arg	Arg	Asp	Phe	Thr	
	200					205					210					215	
		tta				-											1026
	Asn	Leu	Phe	Asn		Met	Asn										
330	.01). ar	70 T		220												
		0> SI															
		l> Li 2> Ty			ł Z												
		2> 13 3> OF			Pagi	. 1 1 11 1	,										
)> SI				LIIUs	•										
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	-120	-	э дес	L	. Dec	-11		-u 11		10 10		110	110 1			Jeu	
			, Ile	e Lei	ı Sei			al As	sn Al	a Th			la Gl	Lu Th	ır Le	eu Thr	
	-109	_				-10						95				-90	
			Asn	Lys	Ile			Lys	Gln	Glu			Tyr	Lys	Leu	Asp	
349	-			-	-85			-		-80			-	-	-75	•	
352	Glu	Glu	Met	Asp	Tyr	Val	Leu	Ile	Asp	Leu	Glu	Thr	Gln	Ser	Glu	Ser	
353				-70					-65					-60			
	Ile	Ile		Ile	Gly	Asp	Asn	Thr	Asp	Leu	Gly	Asp	Gln	Ser	Phe	Thr	
357			- 55					-50					-45				
360	Ser	Leu	Gly	Lys	Val	Gly	His	Gly	Glu	Leu	Glu	Lys	Ile	Asn	Leu	Glu	



like of a and/or Kna has been detected in the Sequence listing from the Sequence Listing from the a contesponding explanation is presented in the <220> to <223> fields of each sequence using n or Xaa.

VERIFICATION SUMMARY PATENT APPLICATION: US/09/652,743A DATE: 03/13/2002 TIME: 16:16:05

Input Set : A:\sequence.ST25.txt

Output Set: N:\CRF3\03132002\1652743A.raw

L:12 M:270 C: Current Application Number differs, Replaced Current Application No L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date $\dot{\textbf{L}}:40$ M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEO ID#:1 L:238 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:3 L:452~M:257~W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:5 L:650 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:7 L:840 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEO ID#:9 L:1038 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:11 L:1222 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:13 L:1459 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:18 L:1515 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20 L:1534 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:21 L:1565 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:22 L:1584 M:341 W: (46) "n" or "Xaa" used, for SEO ID#:23 L:1609 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:24 L:1628 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:25 L:1847 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:38 L:1872 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:39 $L\!:\!1903$ M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:40 L:1965 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:44